To: Jeryl Gardner[JGARDNER@ndep.nv.gov]
Cc: Rodriguez, Dante[Rodriguez.Dante@epa.gov]; Dave Davis[drdavis@blm.gov]
From: Taurus Massey
Sent: Fri 7/15/2016 4:31:08 PM
Subject: Re: Enhanced Evaporation Update

.....
,,,,,,,
Jeryl,

I agree, drain-down rates are not the best measure of performance. What we are using them for is to see if they start to surge up after our evap pumping, indicating reciriculation. I think the easiest way to judge the system performance is to look at the pond level change.

Regards,
Taurus

Taurus Massey

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tmassey@singatsepeakservices.com

On Fri, Jul 15, 2016 at 8:59 AM, Jeryl Gardner <JGARDNER@ndep.nv.gov> wrote:

> I agree with Taurus' explanations and efforts.
> I also believe we are seeing substantially faster fluid level drops in the ponds than typical evaporation methods have produced in previous years.
> I don't believe drain-down rates alone are a good measure of the enhanced evaporation study performance, as those rates appear to be declining steadily with or without enhanced evaporation.
> A check of this hypothesis could be conducted by reviewing the last 3 years' monthly reports for similar months, observing the fluid level changes in the ponds and comparing them to the last two months' fluid level changes.
> This would not be an absolute confirmation of my hypothesis, but it would give us a bit more information until the moisture sensor issues are resolved.
>
> Taurus, do you want to check that out and report the results back to us?
>
> Thanks,
> Jeryl

Jeryl R. Gardner, P.E., C.E.M.
Abandoned Mine Lands Program Manager
Bureau of Corrective Actions, NDEP
775-687-9484
jgardner@ndep.nv.gov

From: Taurus Massey [tmassey@singatsepeakservices.com]
Sent: Friday, July 15, 2016 8:48 AM
To: Rodriguez, Dante
Cc: Dave Davis; Jeryl Gardner
Subject: Re: Enhanced Evaporation Update

Hi Dante,

We have 4 moisture sensors installed, 3 in the panels and 1 as control. Data from the sensors are transmitted to a base station where it is downloaded via laptop. To this point, we haven't been able to get the sensors to transmit reliably. We're working with our contractor and the vendor to get this resolved. We are monitoring the drain-down flow rate data that B&C collects to determine if any recirculation is occurring. We need more data but so far it does not appear that fluid is reporting back to the pond.

Regards,
Taurus

Taurus Massey

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On Thu, Jul 14, 2016 at 8:52 AM, Rodriguez, Dante <Rodriguez.Dante@epa.govRodriguez.Dante@epa.gov>> wrote:
Hi Taurus,
Thank you for the EE update report. My only question is about the moisture sensor results. As I recall from your workplan, you had installed moisture sensors in the soil to aid in determining whether fluids were infiltrating or fully evaporating. How do those work? Is that something that you take readings from? How do you take the readings? What do they

show? Thanks, and we appreciate your efforts!

Dante Rodriguez
Remedial Project Manager
U.S. EPA Region 9
75 Hawthorne Street, SFD-8-2
San Francisco, CA 94105
(415)972-3166

From: Taurus Massey
[mailto:tmassey@singatsepeakservices.comtmassey@singatsepeakservices.com>]
Sent: Monday, July 11, 2016 4:55 PM
To: Jeryl Gardner <JGARDNER@ndep.nv.govJGARDNER@ndep.nv.gov>>
Cc: jrcollins@ndep.nv.govjrcollins@ndep.nv.gov>; Oman, Jack
<Jack.Oman@bp.comJack.Oman@bp.com>>; Rodriguez, Dante
<Rodriguez.Dante@epa.govRodriguez.Dante@epa.gov>>; Mattucci, Richard
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<gprosalendis@quaterra.comgprosalendis@quaterra.com>>; Dave Davis
<drdavis@blm.govdrdavis@blm.gov>>
Subject: Enhanced Evaporation Update

Hi Jeryl,

Per your request, here's a quick update on the Enhanced Evaporation Pilot Test.

Volume - Approximately 376,000 gallons have been pumped with the evap pilot through 7/11/16. The attached spreadsheet summarizes the daily pumping volumes.

Maintenance - Evap nozzles continue to flow without clogging. A few minor leaks have been observed at welds in the piping and were repaired by B&C. All of these leaks occurred in the perimeter ditch which is on the double liner of the VLT HLP.

Evap Panel Surface - Precipitate crust continues to form (before & after pumping photos attached). Fluid appears to sit on top of this crust during pumping operations. We are monitoring VLT drain-down rates to evaluate potential recirculation.

Please contact me if you have any questions. The full Bi-monthly progress report will be sent on August, 11.

Regards,
Taurus

Taurus Massey

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